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ABSTRACT

This publication examines issues related to the operation and management of educational organizations and identifies a number of research questions of potential importance. Section 1 briefly discusses the need for improved efficiency and effectiveness in educational organizations and points out the potential contributions of organizational theorists. Section 2 examines three theoretical perspectives for identifying important organizational research questions. Section 3 identifies several knowledge gaps that limit the effectiveness of the theoretical perspectives from section 2. Section 4 discusses problems and trends related to educational goals and values and organizational research. Section 5 identifies and discusses research questions related to the components of the educational system. Section 6 offers a perspective on research methods and an assessment of current trends in organization theory research. (JG)

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ADMINISTRATION AND MANAGEMENT
IN EDUCATIONAL ORGANIZATIONS

U.S. DEPARTMENT OF HEALTH,
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A Discussion of Issues
and Proposal for a Research Program for the
National Institute of Education

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1. INTRODUCTION

Improvement of administrative process is a major aim of the study of organization behavior. All organizations need administrative improvement, but it is only recently that this need has been clearly recognized in educational institutions.

Common problems, such as relationships to environment, cut across institutional types, making organization behavior research extremely relevant for education. The comparative perspective is a great advantage allowing one to recognize, for instance, similarities between open-classrooms and R & D laboratories.

Many critical challenges facing education today are outlined later in this report. Radical improvement in efficiency rather than fine tuning is necessary though this may have to come through technological change. Organization behavior research can help to provide the necessary understanding of context for administration system changes and its implementation. As vital may be the design of structures and process for effectiveness directly aided by contributions from organization behavior/research.

The knowledge required to contribute to the improvement of the efficiency and effectiveness of educational institutions must come from various sources. In the development of designs for improving administrative efficiency, organization theory joins other management science disciplines (e.g. accounting) as well as those of the educational learning teaching specialist. Again, the organization theorist is but one source of the knowledge necessary to improve the effectiveness of educational institutions.

Although, for example, the organizational theorist may have much to contribute to the understanding of information and communications processes in organizations, he will rarely have the final and direct responsibility for the design of an automated management information system. ADP systems are designed and implemented by specialists in the field. However, the typical administrative design leaves much to be desired in terms of the organizational use and impact characteristics, in all types of institutions. Given the diffuseness of the educational context, the problems associated with designing and implementing managerial technologies in this context would be of the relatively extreme variety.

In general, it is the role of the organization theorist to shift the perspective of these other managerial technologists from a technical to a socio-technical position. One of the critical arenas of managerial concern of current educational institutions, that of "cost-effectiveness" studies, illustrates this process.

1.1 Cost Effectiveness Studies

The cost-effective administration of education institutions, jurisdictions, and programs is an issue of significant interest to many citizens and public administrators. The rising cost of education over the past 20 years, coupled with changing social demands on education as an institution, have underscored the need to examine and understand education as a process; a process which provides very important and constitutionally mandated services to U.S. citizens. This process can be and has been directed toward and responsive to a wide range of human problems. It requires huge quantities of financial and human resources as its driving forces.

The issue remains-what is a cost-effective educational system and how is one designed, created and administered. This issue poses profound problems for the educator, the organizational theoretician, the technologist and administrator alike. The effective accomplishment of the educational goals of society at the least possible cost should not be the guiding principle of those to whom we have entrusted the stewardship of our educational system. In practice, however, the problem of establishing effectiveness criteria for education, a difficult measurement problem in itself, is confounded by a more general problem in that the goals of education are socially defined, changeable and lack fixed dimensions and definitions. Thus, the process of developing effectiveness criteria is and will continue to be a social process involving negotiation, accommodation, rationalization and problem solving by the various constituencies which have legitimate claims to participation in the many roles of which the educational system is comprised.

This complexity, diffuseness and ambiguity of educational goals can be related to the following phenomena which are a part of the organization theorists' familiar domain of study. There are the multiple goal sets of system participants with such goals often differing widely across system participants, and including here issues of goal decomposition, means-end chains and related questions of optimization and sub-optimization. There is also a high uncertainty associated with goal definitions and evaluation criteria. Further, there is frequent variation in which goals are stated, implied, manifest and latent.

The recognition of the complexity of the goal issue, especially in educational institutions, leads to a reformulation of the cost-effectiveness sets pointed at a variety of target interest groups, and contains a much more complex measurement and data requirement problem. Implicit are very stringent requirements for information distribution to interested parties and an expectation that there will be generated an inevitable conflict resolution requirement as latent and previously unstated goal differences become manifest. This immediately creates a potential constraint to the full rationality horizons of the design and sets up new demands on the administrative process. Further, the organization theorist might be instrumental in directing the attention of the cost-effectiveness systems designers to the need to consider not only the measurement and impact problems of stable on-going contexts, but also, importantly, the issues relating to the changing conditions within and outside the target systems.

Thus, the potential contributions of the organization theorist include:

- (1) Description of the environment in which the system operates and to which it responds,
- (2) Providing critical inputs to the design of appropriate system models and
- (3) Performing empirical studies which are required to support the theories underlying these models.

The organization theorist can also contribute to the generation of adequate data bases. Further, he can perform studies that shed light on the issues of implementation of systems including the critical insights into the response of those whose participation and receptivity is required in the organization, if the system is to be usefully and properly integrated into the organizational process. Finally, the impact of rising C/E systems can be observed and evaluated by the organization theorist.

To summarize, organization theorists have an important role in the design and implementation of administrative or managerial practice such as C/E measurement. This is a shared role with the organization theorist devoted primarily to illuminating the organizational contexts of the practices and to providing some of the required inputs for both at the theoretical and methodological level.

2. THEORETICAL PERSPECTIVES

Three theoretical perspectives in organization behavior seem especially appropriate for identifying research questions of potential importance. Organization Process Perspective, Goal Seeking and Decision Making Perspective, and Organization Environment Perspective each proceed from a slightly different conceptual base.

2.1 Organization Process Perspective

Organizations face dilemmas as they seek to structure their activities. On the one hand, managers seek routinization, predictability and efficiency. Emphasis is on developing stable and predictable structures of interaction.

This objective is congruent with what we know about small groups, professionalization and even personality. Individuals in their groups, status strivings and professionalization efforts are seeking to increase their autonomy (internal predictability) at the expense of or in relation to larger systems or the environment. Well liked managers and "successful" groups are those which are able to buffer, moderate and modify external influence so that they are absorbable and do not interfere with the internal regularities.

At the same time, because organizations are open social systems, they must seek effectiveness, or responsiveness to changing environmental demands. This calls for a de-emphasis of closed-system rational models, and the ability to cope with uncertainty.

Yet another dilemma concerns adaptation versus adaptability. It is possible that in changing to meet environmental demands the organization loses the capability to respond to later contingencies. For instance, persons may be put in leadership roles because of their ability to cope with currently pressing problems. When new contingencies arise, the organization may not be able to cope because of a leadership and power structure now unsuited to the new demands.

Vacillations, as organizations attempt to deal sequentially with the succession of problems, arise from inherent dilemmas posed by these organizational processes. That is, the organization is too anarchic and attempts to institute controls to ensure goal directed, predictable behavior. Then, the organization becomes too rigid and inflexible, so it attempts to develop more uncertainty and unpredictability. As this cycle continues, the managerial process involves coping with these dilemmas -- balancing stability and change, innovativeness and predictability, adaptation and adaptability.

Optimal leadership styles and optimal organizational models all co-exist, simultaneously in real world systems like educational institutions operating in reasonably turbulent environments. Stability, system trade-offs and change must be occurring simultaneously and the manager needs to be able to both operationalize these processes and to have criterion for when he should be doing what (and which parts of other individual's job are relevant to these processes).

2.2 Goal-Seeking and Decision Making Perspective

The perspective adopted here is one of organizational choice--the fundamental question being why do organizations make the decisions that they do. Such goal choices and decisions may involve any problem issue or topic area. Organizational choice mechanisms must be understood so that decision systems can be designed that will operate in known ways, or are capable of producing some set of known, "optimal" decisions. In the choice perspective one of the key issues is the premise or goal (criteria, values, measures) used in making the decision.

Decisions are made typically in situations of conflict over objectives, criteria or goals. To elaborate on this last question, is the school for training for jobs, for liberal education, for socialization as an agent of social control, a babysitter--child care agency, a parent, an alternative to working, an instrument of social stratification, either in terms of its actions in tracking students or in its effect on neighborhoods, a locus for the playing out of community political conflicts, a business or industry, or a symbol which has come to be valued in its own right? Decisions typically also involve conflicts over technology--differences in the understanding of the connections between actions and outcomes, causes and effects. Is an open or closed classroom more effective, does heredity or environment matter most, is tracking good or bad, and what does it do--these are all issues in which there are differences in goals and beliefs over the existing technology and state of affairs, and on which decisions must be made.

As a result of these conflicts and uncertainties, bargaining takes place. Policies are bargains. In order for policies to be implemented, persons must perceive them as being consistent with their own demands. This can be accomplished by involving the participants in the goal formulation process. Also, policies or goals can be stated into which participants can project their own values. Policies may be proposed bargains and revoked when there is insufficient support.

Participation (and, therefore, influence) on decisions depends on the issue context. Different parties at interest are involved in decisions on integration, resource allocation, hiring teachers, hiring administrators, etc. Also, because of unclear criteria and technology, processes of social influence come to play a large role in the choice process. When there is not agreement on objectives or on technology, decisions can not be rationalized. The influence is frequently informational social influence -- reality becomes defined by a process of developing a social consensus.

It should be noted that two types of resource are brought to bear in decision situations -- power (derived from dependence relationships, the ability to cope with contingencies, control over resources such as money) and legitimacy-authority. Finally, change tends to be resisted by those who lose power or legitimacy as a consequence of the advocated change, and is favored by those who gain.

Administrators may find it functional to maintain a situation of pluralistic ignorance because of the potential conflicts over objectives and technologies. That is, by keeping each group ignorant of what the others are getting, the administrator can mitigate against a process of social comparison to assess equity. If a participant gets his demands, higher expectations may be generated. Thus, it may be in the administrator's interests to conceal the excess, and ensure that organizational slack is hidden.

2.3 Organization-Environment Perspective

Recently, there has been increasing attention to the influence of environment on organizations. In the case of schools, several environmental changes will be noted in the next section.

Environmental changes impact the educational system in several ways. First, there is the social control of educational organizations. New participants have control over resources, accreditation, and particularly through the legal process, school behaviors. Declining resources and lowered expectations for the value of education make dependence on the environment increasingly problematic. Greater measurement and demands for accountability ultimately lower the autonomy of both teacher and administrator.

Then, these changes result in structural and leadership alterations in educational organizations. New participants with greater power require administrators with more coalition management ability. Tighter resources and emphasis on measurement leads to greater control through formal reporting mechanisms. New technologies stressing openness and innovations may conflict with demands for tighter controls. Further,

the involvement of more interest groups creates a situation of even more goal conflict. The changing expectations for education, from a cure-all for social ills such as inequality and racism to a more modest position, means the further lessening of resources, but also, perhaps, the relaxing of demands.

Third, the legitimacy of education is in question. Educational organizations have multiple functions, including socialization, custody, control, instruction, evaluation-certification, and selection. As environmental values shift, the legitimacy of these functions shift. For instance, there is much current criticism of the school for its alleged perpetuation of social stratification. As values change, school functions are expected to change also. But technologies and administrative structures designed for custody may be ill-suited to the task of instructions.

In these three perspectives one theme stands out--the role of administrator as a balancer--among processes, demands, and influences. This illustrates why attempts at facile rationalization have failed. Administration is substantially more than computational decision making. Therefore research on administration in its actual complexity rather than the non-equivocal, simplistic prescriptions that still appear should be done.

3. KNOWLEDGE GAPS

The above theoretical perspectives can be applied to educational systems but under certain constraints. Three fundamental reasons exist for this, the first two of which relate to organization behavior in general. The third relates specifically to educational systems.

First, the necessary understanding of macro aspects of organizational

behavior even at the level of broad generalities is incomplete. Second, analyses of organizations sharing the peculiar characteristics of school systems - permeable, conflict-ridden organizations with multiple and sometimes inconsistent objectives - are especially scarce. Third, at least for organizational specialists, detailed information of school systems which would allow identification of important variables and elimination of unimportant ones is not yet codified.

3.1 Incomplete Understanding

One limitation is the incomplete understanding of the most general patterns of organization behavior. Organizational theory is frequently concerned with broad categories such as size, organizational structure, environment, technology, and effectiveness. Consistent patterns of causal relationships among **three** categories have not emerged from empirical studies; instead of closure there is widespread disagreement. Among the unresolved issues is the question of whether organizational size is an independent variable or a function of technology and ultimately of effectiveness and of characteristics of the environment.

Also, there exists the question of what conditions mediate effects of the environment on organizations, and under what conditions organizations dominate their environment. Another unresolved issue is whether organizational structure has consequences or is it merely derivative from size, technology and the environment. Finally, is it possible to make predictions of effectiveness less circular than the notion that organizations with structures most consistent with their environments and technologies will be most effective.

Incomplete understanding of the most general patterns of organizational behavior is the result of insufficient research studies and inadequate research designs. Large-scale longitudinal studies of different types of organizations are needed to begin answering some of the issues above.

3.2 Lack of Analysis

The lack of analyses of permeable, conflicted, and multi-goal organizations is perhaps the most glaring gap. Such research, if available, would make studies of organizational behavior in education a logical expansion of what is already known. The effects of permeability are not well documented. A basic notion is that more permeable structures have more boundary personnel, but this has been tested in only a handful of studies. Further, studies of organizational conflict are usually based on single cases from which generalizations are difficult. Conflicted organizations have not appeared in large-scale quantitative studies because of the difficulty of securing reliable information from them.

Further, multi-goal organizations are as often in the political arena as in the realm of administration. There has been a tendency to leave such studies to political scientists who tend to rely on case analysis instead of large-scale data collection. Finally, the effects of permeability, conflict and multiple goals may be interactive so that all three have to be found in a set of organizations to assess their joint effects.

3.3 Lack of Detailed Information

There is a great lack of detailed information about school systems. They have many characteristics distinguishing them from firms and administrative bureaus. There are ill-defined boundaries. That is, do school systems include as "members" their students, parents, and community and political groups. Also, unknown variation in key characteristics exists. Basic data about information systems and accountability are lacking. Further, the relative importance of top leadership, middle-level administration, parents' groups, and political and community organization in shaping school policy are not understood. Hence, the consequences of changes now taking place in educational systems cannot be anticipated and planning for change is difficult.

4. PROBLEMS AND TRENDS

These gaps in our knowledge of organizational behavior are crucial because of several specific developing problems and trends in the educational system. There are three broad classes including: those having to do with changing internal structure and educational processes; those having to do with changes in the educational environment, including shifts in the power distribution and relationship among teachers, parents, students, and other participants in the educational system. These broad classes of problems and trends can be related to or matched with the three theoretical perspectives described earlier in this report. It is vital that we understand what these trends are, how far they have progressed, and in some cases how much of a retreat back to more traditional forms may have taken place.

4.1 Instructional Technology and Structure

Three sub classes and trends associated with these problems of structure, and process can be identified. These are the problem and change in instructional technology and structure, issues of school structure and problems and shifts in management technology.

4.1.1 State of the Art: State of the art is used here to imply two distinct dimensions: what is known in the various fields that impinge on instruction and diffusion of what is known into the school. The existing bodies of knowledge on which educators draw is so diffuse and inadequately developed that there is lack of agreement on prescription (e.g. how to teach reading most effectively to students with reading problems) and even less agreement on the validity of measures that might be used to assess performance and outputs. The nature of the knowledge that is dealt with varies from one area of instruction to another, and from one set of school goals to another. Consequently, some subjects and some kinds of learning are measured far better than others and this has significant consequences for information systems and management. For instance, the tests and measurements technology for assessing reading is well developed (i.e., standardized reading achievement tests) while the technology for assessing affective goals (e.g., development of self-esteem) is inadequate. As a result, programs are evaluated by means of what is measurable (reading scores) and not on these other dimensions that may be more adequately keyed to program objectives.

A management problem arises from the lack of consensus on how to handle a given problem: there is wide variation between and within schools on approaches used to tackle the problem. With a well-developed research arm built into school system functioning, this variable might provide an important opportunity for evaluative research if that would advance the state of the art. But under current conditions, the variability poses coordination problems for managers, with few balancing payoffs.

Where the state of the art is in a state of flux, and where innovative approaches are being generated, the state-of-the-art problem becomes; in part, a diffusion problem (i.e., getting the new knowledge or innovation into the school) and in part an adaptation problem (adapting school structures and practices to the new approaches).

Specific shifts in instructional technology that are worth noting include the change from the textbook centered curriculum to the use of multi-media, goal based and individualized curriculum; from a focus on learning; and from school-centered mode to field (community, industry, etc) based experience.

Further, there is a change from academic-centered outcomes to a relevance-orientation (i.e., career preparation, survival education) and from academic dominance to recognition of including creativity management, and social competence and interest requirements for individual success.

4.1.2 School structure: The traditional factory model of school structure is undergoing significant change. The organization of schools into self-contained classrooms, each led by a single generalist teacher (in the elementary school), all using the same instructional materials and pedagogical techniques, and all studying a standardized curriculum has been called into question. New models are emerging. These new models discard the requirements of constant physical location of students (i.e., classrooms), constant time patterns (e.g., 8:00 - 3:00), constant credits (x credits to graduate, with specification as to subject area distribution), fixed pupil-teacher ratio, and standardized and uniform teacher certification. Examples of these models include the following: (a) "open classrooms" and variants of the English infant school model, (b) the city as a classroom model (e.g., the Parkway Project in Philadelphia and Metro High School in Chicago), and (c) career education models.

4.1.3 Problems and Shifts in Management Technology. Here we can deal with shifts in patterns of administration, leadership and information processes.

Administration. Again, there is a problem of not knowing fully what changes have taken place in the administration of schools and whole educational systems. The distinction between administration and leadership and top management is important. Administration, tentatively, refers to school system personnel above the level of teachers and below policy makers and to activities outside the classroom within school systems (as opposed to between schools and outsiders) and not policy making. The definition of administration may have to be flexible; in some situations teachers and even parents assume administrative roles. Some line between administration and leadership will have to be held. Administration is more likely to be dependent on educational processes and change than leadership, leadership is the more likely independent variable.

Leadership and top management. What changes, if any, that have taken place in leadership and top management of school systems are not fully known. There are two broad categories in terms of which leadership and top management should be described. One consists of values, attitudes, and goals of individual leaders; the second is the structures in which leadership roles are embedded. Relevant values and attitudes include attitudes toward change and innovation, educational philosophies, belief in participatory versus hierarchical organization and relative primacy of educational, administrative and political goals.

Some aspects of structural characteristics affecting leadership include the background of leaders and their relative stability. Also, the autonomy of leaders in making decisions and structuring their organizations is a factor. Finally, it must be decided whether school boards buffer top administrators from the environment, or whether top administrators are used as buffers by others.

Information. A trend exists towards accumulation of more information about schools, school administration, and the educational process. More information flows within schools, and there is greater exchange of information between schools and parents and schools and communities than before. This contrasts with the traditional practice of restricting information passed on to parents to grades and attendance reports and limiting community relations to monthly PTA meetings. Computerization has contributed to the increase of information; so have demands made by state and Federal regulatory agencies. Increasing information has many latent consequences that have been traced by organizational theorists. Middle-level managers may resist greater access to data because it shorts-circuits their functions; depending on how information is used, it may contribute to either centralization or decentralization of decision-making authority.

There are a number of ways to describe properties of the information flow through school systems. One relevant dimension is the quantity of information available. That is, how detailed are records of student performance, attendance, curricular data, information on teachers and staff, financial data, etc. Another dimension is that of input versus output information. Input information describes resources, qualifications of students, and community data. Output information describes student achievement and other measures of effectiveness.

The question of reliability of information also remains. Fiscal data presumably have high reliability; political claims are of low reliability. One should also consider that the reliability of certain data - or their validity - is sometimes subject to dispute, e.g., scores on achievement tests, and how the tests are normed, and access to information. That is, there is a range of individuals who are allowed access to information. Finally, it must be resolved who actually uses information and for what purposes. Information can be used for neutral accounting purposes or to stir political issues.

Specific aspects of management technology that are worth noting include the process of going from administrative practice to the strategies and tactics of management and the exposure-based teacher-education to competency-based field-centered pre-service and in-service training. Also, the procedure of going from centralized authority over systems and decision making to selective de-

centralization/centralization dependent on agreed roles, effectiveness and efficiency is to be considered. Finally, certification is moving toward a competency basis. In addition to the lack of consensus on criteria, teachers are often mismatched with assignment. More attention should be given to the definition of jobs.

Other significant areas of problems and shifting trends associated with structure and process are to be seen in the steeply rising costs of educational inputs and the changing entry, skill and mobility patterns of educational personnel.

2. Problems and Trends Related to Goals and Values

During the past decade there have been major challenges to school administrators from three major constituencies that traditionally have played a rather acquiescent role in the governance of public education. These three groups are: 1) the parents of lower socio-economic status groups and racial minorities, 2) teachers, and 3) students themselves.

For the most part the focus of the protests and direct political and legal challenges to school boards and administrators represent divergent conceptions of the ways in which the schools carry out five primary functions. These ways may have been acceptable to different constituencies at earlier periods. However, they have lost their legitimacy in the face of professed beliefs in equality of educational and social opportunity. These functions (or issues) involve: 1) Instruction, 2) Socialization, 3) Custody -- Control, 4) Evaluation -- Certification, and 5) Selection.

Although each of these functions has been the target of substantial criticism and agitation, the most conspicuous problem area centers on the relationships among instruction, evaluation-certification, and selection. The essence of the issue is that schools have paid more attention to separating the "able" from the "less able" for the purpose of certifying their acceptability for college admission than to providing high quality instruction for all students. In other words, the alleged failure of the instructional system is seen as a product of an arbitrary and illegitimate pre-occupation with selection -- pre-occupation that serves to label and segregate lower SES and lower ability students from their peers either in separate schools or in separate programs (tracks) or classrooms.

The legitimacy of both administrators and teachers has been called into question because of the failure of the school to "produce" consistently high instructional results. By extending Weber's typology of authority (legitimacy) modes to include 1) tradition, 2) legality, 3) charisma, and 4) expertise, it is possible to understand some of the elements in this erosion of legitimacy. The former two modes of legitimacy provide the essential elements on which the performance of that role is based. The conflict, then, centers around a growing disillusionment with tradition and legally based justifications for the recruitment, selection, and promotion of persons in these roles. Thus, this press for greater system responsiveness and productivity in the instructional area is the result of a shift in the value priorities of groups of parents and students away from institutionally justified patterns of action to personal performance-based criteria.

4.2.1 Conflicts over the Functions of the Educational System

Although administrative operations and decision-making procedures are often the targets of pressures for change, the major sources of conflict and attention reside in the arenas of school activity that directly affect their clientele. These can be described as the major functions of schooling.

The first and, perhaps, most obvious function is that of Instruction.

Instruction is often regarded as the primary (if not exclusive) mission of the school and involves the systematic attempt to increase the information base and improve the cognitive and physical skills of students. The curriculum of the school are those specific sequences of materials and experiences to which students are exposed in order to facilitate the acquisition of these skills. The manner in which this exposure takes place and is reinforced is a result of the instructional process or pedagogy used by the teacher. Understanding the instructional function of the school, then, requires an analysis of the content sequencing, and nature of students' formal learning experiences. Proposals for changing instruction must explicitly take all three elements into account.

Socialization, broadly conceived, is the process of developing in persons those attitudes, beliefs, expectations, values, and capacities that are necessary for the successful and compatible performance of social roles in specified social systems (see Inkeles, 1968). Therefore to analyze the school's role in preparing youngsters for life as adults is to consider not only the relatively limited range of information and skills that is typically dealt with in the formal curriculum of the school but also the development of the elaborate belief expectation, and behavior codes that characterize "normal" or "appropriate" behavior in the occupational and social worlds of adults.

In other words the socialization function of the school serves to attach social meaning, significance, and utility to the capacities developed by the instructional function, and like the latter, it is also characterized (by Dreeben, 1968 and Bidwell, 1972) as having a specific content, sequencing of experiences, and various modes of transmission (i.e., influence mechanisms). It is important to attempt to distinguish between those outcomes and capacities that facilitate one's accommodation to schooling per se as distinct from one's capacities to deal effectively outside the school. From the point of view of Parsons' paradigm, this suggests that socialization outcomes that facilitate students' capacities for Adaptation and Goal-achievement in the larger society may conflict with those orientations that facilitate the school's needs for integration and maintenance of existing patterns of influence and activity (Latency).

The potential strain that arises within the socialization function itself is induced, in part, by the involuntary nature of the formal student role. Society believes that schooling is both a necessity and a social good. Therefore schools have been charged with the responsibility of providing youngsters up to a given age with formal instruction. In addition, the youngsters themselves face the legal obligation of attending school regardless of their personal predilections to the contrary. In this sense, then the school performs a custody-control function for the larger society that pervades the way in which both classroom and school-wide structures and activity patterns are defined. Of growing concern to both educators and the public is the extent to which attention to custody-control pervades both the school's instructional mission and its orientations toward student socialization. Certainly no serious work on the social organization of schooling should proceed without taking the directions and mechanisms of this function explicitly into account.

In fact, concern with custody-control seems to have pervaded the school to such an extent that it also impinges on the school's fourth major function evaluation-certification. This "contamination" is apparent at both the classroom and school system levels. In the classroom, (for example teachers control the evaluation process and commonly dispense grades not only on the basis of student performance and effort but on punctuality, attendance, "attitude," and deportment as well. At the school system level formal certification and the awarding of diplomas depend as much on students' exposure to twelve full years of schooling as on the skills they acquire. As competency-based graduation requirements and alternative work-study programs are discussed and implemented in various states, the operational distinction between instructional,

socialization, and custodial outcomes will become clearer. Our research agenda should anticipate these changes.

What this suggests is that the school's instructional function and its selection function are related to each other in terms of the kind of evaluation-certification model employed. Although the selection function of the school is often regarded as an unanticipated consequence, rather than a deliberate mandate, of schooling, it affects the life-chances and learning opportunities of students in two ways. First access to programs, courses, teachers, and facilities within the school system are often limited to certain groups of students often through deliberate system of tracking. This is called internal selection. Second, opportunities for access to jobs and future educational experiences after finishing high school are differentially affected by the kinds of internal selection opportunities the student has had, what he has learned in them, and how he has been graded and certified. The latter become translated into the external selection consequences of schooling.

This controversy over the appropriate balance among functions of the school system has manifested itself in further pressures. The first is for increased accountability to the public and the second is for increased rationalization of the administrative process. *

4.2.2. Accountability. The concept of accountability is fairly new to schools at all levels. Accountability means that individual teachers, schools, districts, and whole systems are expected to attain objectives defined in advance. Accountability not only requires goals; it also assigns responsibility for goals to specific people and groups. In this sense, meaningful accountability schemes are the product of rationalization. Aspects of accountability that should be studied include the question of whether there is accountability for the full range of goals of school systems or if the objectives that are not reliably measured can be excluded from accountability schemes. Further, the potential range of goals for which individuals and groups should be held accountable should be determined. The unit of accountability is the key issue. For many objectives, accountability can be at the level of the classroom, the school, and larger units as well. Moreover, if individual schools or teachers are held accountable for an expected level of performance, is information about their performance used for bookkeeping purposes only or to reward or sanction?

Finally, there remains the issue of internal versus external accountability. That is, should schools respond to demands that they be accountable to parent and community groups, and are such demand legitimate?

It is evident that accountability is a product of the movement toward program and performance budgeting. As the latter stimulate definitions of program element and subgoals, objectives become more specific and accountability shifts downward in organizations.

4.2.3 Rationalization of administration: Rationalization of administration consists of two things: definition of goals and definition of processes or means-ends chains which contribute toward achieving the predefined goals. Among possible goals of school systems are: student achievement, retention of students (attendance), minimization of costs, productivity, and such affective outputs as community support.

The general pattern of school system functioning is not to define goals but to operate through a process of management by exception (i.e., students with poor achievement and sporadic attendance were singled out for special treatment; excessive expenditures were checked after the fact; corrective measures were taken only after poor community relations were evident). Development of program budgeting concepts has required specification of major program goals and elements. Rationalization has occurred to the extent to which these concepts have penetrated the organization.

The movement toward rationalization is beginning in education, but the likelihood is that educational systems by their very nature can never be completely rationalized. This is partly true because of the state of art in education. (For instance, it is technically easier to define the end of student achievement than the means.) A more serious problem, however, is that the ramification of rationalization impinge on the political/power context

in which educational systems function. Given the multiplicity of school goals -- and especially the latent goals that so conflict with the official mythology of schools and schooling that they cannot be made explicit -- the definition of ends is politically too sensitive to permit rationalization on a number of key aspects of school functioning. The custody/control function, for example, is a latent function of schools that cannot be rationalized without generating heated conflict.

4.3 Problems and Trends Related to the Organizational Environment

Major classes of environmental problems and trends can be discerned in the organizational environment. Specifically, there are shifts in power distribution among participants; changes in boundaries between internal and external participants and among internal members of the organization. Further, there are shifting patterns of interdependence among educational and non-educational organizations; and changes in general social norms of the society.

4.3.1 Shifts in Power Distribution: The traditional model is one of school board dominance by the superintendent and professional staff, with real (as opposed to formal) decision making power concentrated in the hands of the superintendent and system professionals. Under this arrangement, despite the mythology of lay control over education, school boards have functioned largely as rubber stamps. Under traditional arrangements, the power of teachers' organizations is limited to certain bread-and-butter issues that are negotiated by collective bargaining, but critical instructional and managerial spheres of authority remain undiluted in the superintendent's hands. And under traditional arrangements, student power is nonexistent.

The new patterns that are emerging involve new roles (and role norms) for teachers, parents, and students. As an example, consider shifts in the meanings attached to the term "parent participation." The conventional

schoolman's usage connotes parent participation as a supportive resource to be mobilized by educators to facilitate their jobs as they define it. Communication is largely one-way, from school to community. Or, even when it is two-way, the input from the community is viewed as purely informational or advisory to schoolmen but in no way limiting their sphere of decision making authority. To reformers who argued for community control (or more modest variants of that), parent participation implied changing the distribution of power between professionals and laymen, restructuring a school system's decision making apparatus so that parents were clearly inside the system rather than its external environment, and making communication a more balanced two-way process with professionals clearly accountable to laymen. The distinction between the conventional and reform usage would seem to be the distinction between administrators dealing with parents in terms of the functions of communication and buffering or decision making and control/evaluation.

The range of existing power system needs to be delineated as well as the broader range of hypothetically possible power systems.

4.3.2 Shift in Leverage: Among the major trends in social conditions to which school systems have had to respond during the past decade is the shift in leverage which various non-administrative constituencies have tried to exercise over educational policy making, decision making, and daily operations. The leverage has been exercised: 1) at the federal level through the administration of grants targeted toward the implementation and operation of distinctive and usually supplementary

programs; 2) through state aid based on meeting acceptable accreditation standards and on the distributions across and within districts of minority group, handicapped, or exceptional clientele; 3) through changes in state laws governing certification standards for both students and staff; 4) through growing concern and activism at the local and community level of a variety of socio-economic and ethnic constituencies that have traditionally exercised little or no influence over educational affairs; 5) through the emergence of vocal and unified pressures from within the teaching and guidance staffs and their union or association representative; 6) through changes in legal precedents and court decisions at both the federal and state levels; 7) through the resistance and protests of students themselves over infringements on their rights as individuals; and 8) through the dissemination of research and development findings and products that implicitly draw attention to existing policies and practices.

In each case the attempted exercise of power or influence on school operations carries with it both political and normative elements. In other words, there is an implicit value orientation underlying each demand for system compliance or accommodation that may be incongruent with the underlying value assumptions and orientations reflected in current system operations.

These value biases may be of two kinds. The first accepts the basic value orientation underlying a given practice as acceptable but questions the degree to which its consequences reach an "acceptable"

level. Here the stress may not be on reorientation of goals or procedures but on a redistribution of technical or human resources in order to facilitate goal achievement. The second mode of value incongruence represents a challenge to the underlying character of a given policy of practice itself.

In addition, each instance of political confrontation that faces school administrators carries with it not only the explicit demand for superficial compliance but also the implicit desire for a change in orientations which translates token concessions or compliance into new system commitments. That is, these pressure groups or sources of economic or political power often expect school administrators both to respond in new and appropriate ways to their technical or normative demands and to believe in the inherent rightness of the mode of response. In the first instance this implies an acceptance of a new set of standards (or levels) of performance, while in the second it implies acceptance of wholly new goals or modes of performance.

A new norm of sharing power with others has emerged at policy-making and management levels. Increased involvement and collaboration has resulted from a new understanding of human needs, satisfactions, and potential for results compatible with systems goals. School boards are strategic points of tension where conflicting pressures are especially apparent. Research is needed to identify the method in which school boards cope with these pressures and to suggest alternatives. The pressures on school boards have implications for individual member's motivation to serve, willingness to take risks, and the type of training and experience needed.

4.3.3 Changes in Boundaries Between Participants: Boundary lines of role responsibility between and among internal and external participants have become blurred. Changes in the entire role structure are creating large areas of controversy and role conflict. Relationships most affected have included those between school and home, teachers and administrators, teachers and boards, teachers and community and boards and community.

The major shifts taking place in the roles that comprise educational systems are producing or accentuating tensions between professional and bureaucratic norms. New accommodations are required as educational systems become more specialized and professionalized. The division and understanding and expectations of responsibilities must be clarified. Few attempts have been made to identify inter-participant responsibilities as they share in performing the functions of the organization. Increasingly, informal lay groups and professional associations have pressed to share in advisory and decision-making activities. The traditional boundaries have become blurred. The new balances of power among teachers, citizen groups and administrators have implications for administrators which need to be more clearly understood. In particular, teacher organizations are demanding authority to influence or control decisions that traditionally have been made by administrators. At the same time, shifts in the balance of control between school and family is challenging traditional professional standards and bureaucratic norms. These developments raise the saliency of understanding collective bargaining procedures, due process and appeal systems, and affirmative action programs.

Further, there is increased permeability of educational systems with consequent pressures for accountability and rationality. Also, community, professional and management pressures for goal setting authority, proof of effectiveness and efficiency of systems have required new technologies for involvement, collaboration, decision making and problem solving.

4.3.4 Shifting Patterns of Inter-organizational Interdependence: Increased costs of support services and systems, shared responsibilities, and overlapping responsibilities have required increased dialogue, review of plans and even shared decision making and consortia between and among the schools and other public and private institutions.

Moreover, the quality of school information has been limited. Delivery forms have been shaped by systems personnel and not users. There is little coordination of effort among levels - federal, state, district, school, inter-district for collection data management and delivery of information.

Recently, schools are beginning to coordinate the home, volunteers and other community agencies as part of support resources available. New and barely understood relationships exist or are evolving with other social service institutions.

At the same time school districts are being required to share resources due to growing costs and interdependence, which demands more information about interorganizational relations in education. As important dimensions of this problem, more information is needed about the opportunities and constraints created by federal programs and the quality and effectiveness of relationships between federal agencies and school district officials.

4.3.5 Changes in Societal Norms: A mobile population has increased pressure for national and regional as well as state and local curriculum. Equal educational opportunity for all children and youth, adult and community training and enrichment has created new demands on the system to be responsive to a wide variety of goals and clientele.

Educational systems have been seen as instruments of social change. School personnel and systems increasingly have been seen as assuming community responsibility for shared planning, technological support and

service support in the form of adult services, recreational services, etc. These trends create pressures on school systems to adapt their educational and organizational structures.

Requirements of openness, responsiveness to democratic institutions, respect for the individual, and a responsiveness to trends about and a share in dealing with the problems of society have been added to traditional and skill-building responsibilities of the school.

Other emerging social norms which are relevant include the equality of opportunity for all minorities, disadvantaged and women, affirmative employment action, and due process for parents students and staff. Further, there should be openness of policy making, records and quality control of personnel.

5. RESEARCH QUESTIONS RELATED TO THE COMPONENTS OF THE EDUCATIONAL SYSTEM

Research questions are most expeditiously framed and assessed in terms of functional relations among important classes of variable that relate to the educational system, its function, and its environment. Three such classes of variables are proposed. They have emerged from a juxtaposition of the institutional problem areas and the theoretical perspectives presented earlier in this report.

Our three classes and their components are as before:

1. Structure/process
Included in this set are variables referring to administrative structure, instructional technology and work flow, and management processes.
2. Goals/outcomes
Included in this set are the variables referencing fundamental values of the participants -- including consumers -- and measures utilized to assess performance.
3. Participants/power
Included in this set are variables referencing the degree of involvement of various classes of participants, their demands on the system, and the patterning of their participation and efforts to influence the outcomes and shape of the system.

These three classes of variables parallel the three theoretical perspectives and the three classes of problems and trends.

Below we have constructed a matrix (see Figure 1) utilizing these classes of variables which, classify (and assess the inter-relationship among) a set of potential research questions. However, there is also an underlying logic to the matrix, going beyond a purely classificatory technique. Class 1 is essentially the internal mechanisms; class 3 the human groups, both internal and external who are seeking to influence the system; and class 2 represents the focus, the resultant, and the mechanism for shaping the relationship between (1) and (3). In every sense, (2) is a central-middle-intervening variable.

It should be noted that in this paradigm each class of variable is considered both a dependent and an independent variable. This is particularly helpful in comprehending and expressing the very real research uncertainty concerning the direction of causality.

Overlaying the 3 x 3 matrix of relationship are two pervasive concepts; the first is change, both autonomous (over which the system has no control) and induced, or planned or negotiated, which enables us to cope with both static and dynamic relationships among the variables. The second is management training, institutionalizing the process of change. Perhaps we should make note that research questions are obviously not limited to relationships between classes. Research studies within a single class of variables can take two forms: (a) purely descriptive studies of the character and distribution of a given variable -- for example, assessing community sentiments on the functions and performance of their schools, (b) relationship between variables within a given class -- for example, the impact of changing community standards on mechanisms of accountability.

Figure 1

INDEPENDENT VARIABLES

DEPENDENT VARIABLES	INDEPENDENT VARIABLES			
	Structure/Process		Goals/Outcomes	Participants/Power
	Structure/ Process	1 Structure/ structure	4 Goals/ structure	7 Participants/ structure
	Goals/ Outcomes	2 Structure/ goals	5 Goals/ goals	8 Participants/ goals
	Participants/ Power	3 Structure/ participants	6 Goals/ participants	9 Participants/ participants

We feel that this matrix will provide a method for detecting gaps in our knowledge, in the distribution of proposals and the relationships among proposals. (Obviously some will simply reverse the dependent and independent variables.) This formulation should encourage researchers to take a systemic view of the variables and components of the educational system and its environment.

The matrix formulation also lends itself naturally to a design orientation. Each class of variables can be considered subject to control and manipulation, and its effects traced out. Some variables (e.g., community power structure) must be considered more nearly as uncontrollable, contextual variables, at least relative to small systems. However, decisions at the macro level (e.g., federal funding and legislation) may even be capable of influencing the distribution of community power.

The research questions presented below were selected on dual criteria of priority: on significance and importance for education, and on the ripeness of our organization behavior theories for the proposed research together with the methodological feasibility for carrying it out. No pretense is made for completeness. The specific questions raised within each main topic area are intended to be illustrative and suggestive.

The matrix proved to be a useful device for generating research questions. We recognize however that any given independent variable may lead to multiple effects that span the categories in our three-dimensional classification. Further, for illustrative purposes we have included a few examples of such questions. For the most part we have restricted our analyses to the matrix cells. In general we have kept to the matrix cells in our analysis. This results in the repetition of certain cell-spanning themes, and this may stimulate some readers to design

research programs that do indeed span our matrix cells.

It is our hope that just this will occur, that is, we would be concerned if the approach we selected as useful resulted in any rigidities in research program designs on the part of either NIE or the research community. This last point will found to be particularly applicable to our emphasis, in generating research question priorities, on the effects of possible trends towards new educational structures and processes. This is consonant with our earlier recognition of the importance of explicit consideration of current trends in our theory building and research program design. The particular issue of new educational forms was selected by us as being of potentially high priority but should not so act to eliminate consideration of the impact of other significant (and changing) trends.

Finally we should note that cells 2 and 4, 3 and 7, and 6 and 8 are pairs which deal with the same variables but reversing those which are independent and dependent in each pair case. Clearly in many cases we could be dealing with common research programs in each of the cells in such a pair with perhaps only differences in perspective or emphasis, or sometimes merely differences in hypothesized direction of effects. We have elected to define different research projects in each of the cells, but we present these pairs sequentially to facilitate considerations. Thus the order of presentation of research questions by cells will be: 1,2,4,3,7,6,8,9.

5.1. Cell 1: Structure/Structure Studies: The Nature of Structural Options

Four priority areas have been selected for research in this cell. These are:

- a) Descriptive studies of the structural, technological, and administrative.
- b) Implementation and impact studies of new administrative practices.

- c) Studies of roles and manning for administrative and service functions in educational institutions.
- d) Studies of the implications of new forms and structures of schools and changing educational state-of-the-art on administrative practice.

5.1.1 Structural, Technological, and Administrative Variation One of the major constraints on our understanding of organizational and administrative processes in organizations is the paucity of data on just what does occur in schools in these areas, and what ranges and sources of variation are to be observed. Thus, some of the characteristics of administration that should be examined are:

- a) Size of the administrative component.
- b) Specialization of administrators, and by what criteria they are specialized.
- c) Rules, regulations, and standardization of procedures.
- d) Extent to which administrators exercise line authority as opposed to serving as expert resources for line personnel.
- e) The number of levels of administration.

Similar questions can be raised in the technological/state-of-the-art-areas. Some of the specific questions that would seem to be worth examining might be:

- What is the range of existing variability now in what we have labelled the "Structure" of schooling? What is the degree of change each represents from the conventional model of schooling? On what kinds of dimensions are the changes salient?
- What is the range of existing variability in information systems used in school systems? What is the degree of change each represents from the conventional model of schooling? On what kinds of dimensions are the

changes salient?

- What is the range of existing variability in the state of the arts that impinge on pedagogy? Research here too requires conceptual work on the areas of pedagogy and approaches to pedagogy that are affected by the state of the art(s). The question of the range of existing variability here is one of appraising the state of development of knowledge bases and technologies in each of these areas of pedagogy and approaches to pedagogy.

As we earlier noted, considerable change may be going on within school systems and any research program requires relevant cognizance of such trends. Thus we might ask:

- What trends are emerging in the division of labor within and among the various levels within the institution of education? This includes shifts in the locus of control among schools, school districts, states, federal agencies and other public and private organizations, such as teacher training institutions, accrediting agencies, publishers, colleges. It also includes consideration of administrative decentralization within school districts and conflicts among subgroups over divisions of labor, i.e., extramural vs. academic programs, special education and vocational education vs. academic.

And we could note that:

- The trend toward delegation of responsibility to the school level with autonomy over the mix and support of resources has suggested a shift in decision making and would require competence and commitment to find productive solutions to organizational and system problems. However, it would be an oversimplification to consider decentralization apart from the concomitant process centralization. More information is needed

about the effects of centralizing and decentralizing various functions and the implications for administration.

5.1.2 Implementation and Impact Studies of New Administrative Practices and Structures

Desire to change the arrangements of internal resources of time, facilities (i.e., space, materials, equipment), staff, students in different ways has led to numerous innovations in recent years. In most cases the solutions have been packaged in terms of the pilot site and disseminated in search of a similar problem. Little success of translation from school to school has been realized. Nor do we have much in the way of reliable data on what has been the impact of such changes at the school and district levels.

In the most general sense we need to know:

- How do variations and changes in either or both structures and administrative procedures affect such factors as long-range planning, productivity, and incentives at the district and school level?

In order to pursue such research, studies are needed on the social process involved in establishing cost effectiveness criteria, viewing the criteria as a product of negotiation, accommodation, and problem solving among various constituencies and interest groups. We might go on to ask:

- What criteria for success are employed by the various sub-groups and outside groups to measure the success of the administrative innovations at various points in time?
- What are the perceptions of success at various points in time?

The following are some of the sub-groups to be considered: innovation agents, Board of Education, administration, middle management, unions teachers, principals, parents, students, general community.

- . The impact of externally induced innovations on the personnel selection process could also be explored (i.e., what are the roles of patronage, open competition involving specialized knowledge on "general mental capacity," practical experience closed competition involving credentials, etc., in the personnel selection process? Do they change under the organizational stress generated by the externally induced innovation?).

The whole field of implementation research needs to be open up in the administrative practices area. We require understanding of:

- . How externally induced innovations are perceived, received and accepted/rejected by the policy making and managerial structure of school system.
- . How changes in managerial style and policy orientation affects the operations of crucial sub-groups in the bureaucracy.
- . How potential changes in the system's differentiated control and sanction mechanisms are introduced to interested and crucial sub-groups in the bureaucracy.

- What are the patterns and cycles by which administrative innovations penetrate educational organizations and become institutionalized?
- What are the roles, requirements, and effectiveness of various types of administrative change agents?

5.1.3 Roles and Manning for Administrative and Service Functions

Changes in administrative process call for shifts in the required roles and role incumbents. We need data on present role definitions and the skills, experience, and orientations of present role incumbents; and we require insights into the shifts that are likely to be encountered in the future. In terms of these changing patterns we might ask, for example:

- What new roles, functions, and systems will emerge from the use of differentiated staffing using paraprofessionals and externally contracted personnel?

Further, we need not feel bound by existing patterns of manning or organization of school functions. Thus we may ask in a potentially normative context:

- Whether delivery of all services need be internally managed and controlled by school personnel?

This relates to the key question:

- What types of background, orientation, training, and legitimacy will be required of future educational administrators in various roles? And, a corollary, where and how are they most likely to be able to obtain such characteristics?

- What are the implications for such potential shifts in role and personnel requirements for the professional status of instructional personnel?

5.1.4 Implications of New School Forms and the Changing Educational State of the Art

Changing structures and processes in educational practice will have an important impact on the forms and effectiveness of administrative practice. Thus we could ask:

- Will new focuses on individualization of instruction have influences on schools and district size in terms of:
 - a) problems of instruction related to pupil and teaching staff organization?
 - b) problems in providing services?
 - c) problems in administrative staffing?
- What are the effects on learners, staff, and systems when media and mode are adopted for individual learners?

If we focus on some of the potential trends towards newer modes of education, a number of important issues can be raised:

- How does variability in the "structure" of schooling (especially the range of variability introduced in the newer modes, such as open classrooms and the city-as-classroom) affect administrative demands and requirements with respect to the functions school perform (instruction, socialization, custody/control, evaluation/certification, and internal selection, e.g., tracking)?
- With regard to instruction, how do these changes in "structure" lead to the development of new modes of staffing, new definitions of curriculum and teaching materials, new modes of monitoring, etc.?

- What dysfunctional consequences follow if new structural designs are administered using conventional rather than new-style modes of staffing, curriculum design, etc.?
- With regard to the overlapping, somewhat latent functions of socialization, custody/control, evaluation/certification, and internal selection, how and to what extent do these new structural changes relieve some of the "discipline" problems produced by some of the less pliant students in the system? What new problems might be anticipated, and what kinds of unanticipated problems emerge in the new structure? How can the structural design be optimized to relieve the greatest possible number of new-style problems?
- Clearly, the new structures complicate the development of efficient and effective information systems, especially if we consider the city-as-classroom or employer-based career education models. What are the critical management information requirements for efficiently and effectively administering systems of this kind, and how significantly do they differ from the management information requirements of conventional school models? Do the new structures require a greater allocation of resources for the information subsystem?

Cell 2:

5.2. Effect of Structure on Goals

Two priorities areas were selected in this cell:

- a) The effects of variations in the level of and participants to the governance processes in schools on goal setting.
- b) The impact of new educational structures and processes.

5.2.1 Variations in Governance

An issue of some importance here is:

- What are the effects of various levels of governance (state, district, school, classroom) on setting and achieving goals?

And a related question is:

- Should those being served in educational systems participate in the goal setting process?

5.2.2 New Educational Structures and Processes

As before there are an important set of questions in this cell related to some of the possible trends in the new educational structures and processes and in the trends towards shifting target populations:

- What, if any, is the impact of structural change (such as employer-based career education) on the outcomes of schooling, especially for these low-status students, and especially in terms of the functions schools perform? What conditions must accompany structural change to increase the likelihood that structural changes will produce concomitant changes in goal definition and outcomes? Before this question can be adequately assessed, new indicators must be developed that can measure school outcomes of a nonacademic orientation. Once these measures are developed, they will have a significant impact on the indicators used to assess performance of the academically-oriented as well as the nonacademically-oriented students.
- Do the new structures make explicit some of the latent functions of schooling (e.g., evaluation/certification and internal selection) in ways

that reduce some of the political problems encountered in rationalizing such goals in conventional settings? And if this is so, do such structures permit greater rationalization of goals?

Do the new structures permit information to be used for accountability in ways resisted by conventional structures? (e.g., there is reason to expect employer-based career education systems to be more amenable than conventional schools to use of management information systems for accountability. Is this in fact a valid assumption? If so, what can be learned from the context of these employer-based systems that might be applied to making the use of information less threatening in conventional school settings?)

Cell 4:

5.3 Effects of Goals/Outcomes on Structure/Process

The two priority areas selected in this cell were concerned with:

- a) How the setting of evaluation criteria might influence various decision processes in educational organizations.
- b) The impact of rationalization goals on classroom level behavior.

5.3.1 Evaluation and Decision Processes

Thus, since goals, technology, and even the current situation are often unclear, therefore no immediately obvious criteria are indicated. There is, rather, a contest over criteria. Once the criteria for a decision are specified, the outcome is largely specified as well. Thus, power and influence may be used in the criteria setting process.

- Research is needed to explore the conditions that affect the criteria used in:
 - a) teacher and administrator hiring
 - b) teacher and administrator promotion
 - c) teacher and administrator firing
 - d) the allocation of resources (including resources of different types)
 - e) the decision to embark on new programs
 - f) the program abandonment decision
 - g) program and other evaluation

Criteria need to be described in more general terms, such as universalism/particularism, or bureaucratic/nonbureaucratic, or sponsorship versus contest.

5.3.2 Rationalization Goals and Classroom Behavior

- How does rationalization, with its implications for accountability affect the functioning of teachers and administrators? Under what condition does the administrator react to rationalization by attempting to exercise greater control over his teachers? Under what conditions does the administrator use rationalization to permit greater flexibility? Under what conditions does rationalization reduce teachers' flexibility? (i.e., do they teach for the tests?)
- What classroom effects are found from broad goal setting at policy levels?
- What are the staffing and organizing implications of a rationalized system?

Cell 3

5.4 Effects of Structure on Participants' Power

There is a need for explanatory studies using the power structure as a dependent

variable. Each variable can be examined in relation to hypothesized antecedents:

- a) Centralization
- b) Specialization
- c) Complexity
- d) Professionalization
- e) Standardization
- f) Turnover

Since choice is important, and social influence affects choice processes when there is uncertainty in the decision situation, another important issue would appear to be the variables that determine social influence:

- a) Structure
- b) Information
- c) History
- d) Background-personal characteristics
- e) Resources

Two priority areas were therefore selected:

- a) Studies of the effect of structure on the distribution of participant power. Included here are studies of variations that occur in participation in decision making as a consequence of structure.
- b) The impact of new structures and processes in education.

5.4.1 The Distribution of Participant Power

An extremely important issue is:

- Does administrative specialization alter the distribution of power among

administrators? This includes the power of and conflict among administrator organizations and the authority of particular positions, such as R&D personnel or counselors.

Related is the question of participation in decision making. Participation is not only who is involved, but their weighting or relative influence. This should be examined across decision issues and across locations. The issue here is whose interests are served?

- What are the admixtures and relationships among patterns of administration in different decision areas and how does the balance between centralization and decentralization affect linkages with external groups?
- For any decisions issue in which groups or individuals are involved, how does this involvement vary over decisions and over administrative units (e.g., how does decision participation vary over teacher hiring and promotion, and between place X and place Y)?

5.4.2 New Educational Structures and Processes

- How do new structures (especially those like employer-based career education that imply nontraditional staffing patterns) affect power distributions: the internal power distribution between administrators and teachers, and the external power distribution between school professionals and organizations in the school's environment (e.g., business, cultural institutions that form the core of some of the city-as-classroom projects, etc.)?
- How do teachers' unions respond to incursions of nonteachers (in the sense of both certification and occupational identity) into teaching

roles? What is the impact on union demands? Under what conditions do unions react favorably to the changes and play supportive roles in implementing them? Under what conditions do unions oppose the changes and attempt to block them?

- Do the new structures increase the responsiveness of school systems to the needs of traditionally less-favored components of the student body (e.g., less academically oriented, low achieving, low SES, less pliant, more "disruptive" students)? And, therefore, do the new structures in effect bring about an increase in the status of these low-status students and with it a shift in the informal distribution of power among student subgroups? What are the implications of this for resource allocation?

So far we have restricted our research question generation process to those that emerge within a cell in the matrix. We may also generate research questions in which, for example, structural, goal, and power variables are determined by changes in structure, spanning cells 1, 2, and 3. Thus we can ask:

- How does the existence of a new technology bring about changes in all three areas of structure, goal definition and outcomes, and power?

For instance, once a school brings in an appealing technology like a computer or equipment to simulate space flight along with a hookup to NASA information systems, to what extent does this ease the change to new organizational structures, the definition of new goals, the creation of information systems that can help assess achievement of those goals, and the power distribution among groups (internal or external) with an interest in the old versus the new? How can such technologies be used by administrators to stimulate change? What unanticipated

consequences emerge in such attempts at planned change, using new technologies as the critical change agents?

Cell 7:

5.5 The Effects of Power on Structure

Pressures that come across the immediate boundaries of schools and school systems may effectively act to constrain the range of options available to administrators and force structural adaptations to meet changing demands. Such pressures may come from, for example, federal government, citizens (with possible variations between communities), and teacher associations. Concern with this set of issues has generated a single priority research area for this cell.

5.5.1 The Impact of External Pressures on School Structures

The general question could be stated as:

- What implications do the blurred distinctions between who is in and outside organizations (blurred boundaries) have to administration?

Some specific issues are:

- To what extent do citizens influence decisions in comparison to the level of control desired? Compare forms of control (e.g., cooperation, conflict), types of governance mechanisms (e.g., PTA, Committees, School Board). Problem of surveillance and balance of power.
- Do different community contexts (high-low SES, status congruence/incongruence between professionals and community) affect the range of school structures that are acceptable? Or can positive leadership

overcome these constraints and increase the possible range? What are the leadership qualities needed in different kinds of communities to make this possible?

- What are the patterns of relationships among public and private school districts (cooperation, bargaining, conflict) and between school districts and agencies of the federal government which sponsor programs that impose constraints and coordination problems in local school districts?
- What are the implications of professional association norms over system and personnel development? How are the resulting professionalization and teacher militancy altering the locus of decision making power (and authority)? Compare forms of militancy and initiative with types of decisions controlled. For example, how does decentralization affect teacher organization?

Cell 5:

5.6 Nature of and Interaction among Goal/Outcome Type Variables

5.6.1 The Impact of Rationalization on Goal Systems

The single priority area selected in this cell is concerned with the possibly changing nature of specific goals for educational practice and administration as a function of processes of rationalization.

Indicators of performance as a concept in educational management is in its infancy. Cost/pupil, drop-out rates, and achievement data related to the normal curve have been vaguely used as indicators, but have not been used to modify the system in a very precise manner. Indicators used as the basis for

determining system objectives, health and program needs further study. Achievement, client retention, productivity and humaneness indices should be helpful at appropriate levels and for comparability studies. There is no adequate data base which is readily accessible to users and which can be used to analyze trends. New information is required in view of the comprehensive planning called for by a growing number of accountability systems, the use of block grant and revenue sharing plans and program budgeting procedures. Thus we must ask:

- What is the range of existing variability in rationalization of school systems? Research in this area requires conceptual work on the goals and means-end chains that might theoretically be rationalized. What is the extent of change that is occurring on rationalization of each of these goals and means-end chains? On what kinds of dimensions are the changes salient?
- To what extent does rationalization of some goals and not others lead to reallocation of resources among goals in favor of those rationalized? Given the significance of many of the latent functions of schooling that cannot be rationalized without provoking heated controversy, the question becomes an important one for administrators to cope with. They will be accountable for objectives x, y, and z, and therefore will want to put a large proportion of system resources into their accomplishment. But how will they justify the resources allocated to the other, nonrationalized functions? Some of these functions can be hidden administratively, subsumed under other things (e.g., socialization can be hidden in instruction). But significant resources are devoted to custody/control and some school personnel deal only with discipline problems.

5.7 Cell 6

6: Effects of Goals/Outcomes on Participants' Power

A single priority area was selected.

5.7.1 The Impact of Rationalization on Administrative Power

- Does the power of the administration component increase as the system moves toward rationality-based goals?
- Does the power of the administrative component increase as the goals of the organization become more focussed on the maintenance and efficient utilization of capital intensive technologies?
- How does rationalization affect the power distribution among participants? Does the power of administrators increase? Does the power of the community increase? How can an optimal rationalization/accountability system be designed that does not threaten school professionals? To what extent can obstacles to instituting such systems be overcome by participative approaches to the design and implementation of such systems?

Cell 8

5.8 Effects of Participants/Power on Goals/Outcomes

A need was perceived for explanatory studies using the power structure as an independent variable. Each variable identified below could be treated as an independent variable:

- a) Teacher power, authority, and militancy
- b) Power and authority of citizen groups
- c) Power and authority of specialists
- d) Power and authority of various levels of the system (centralization, decentralization)

Each of these variables could then be examined in relation to hypothesized consequences:

- a) Organizational, innovation, and resistance to change
- b) Bureaucratic and professional standards (e.g., universalism versus nepotism, favoritism)
- c) Accessibility of citizens and organizational autonomy
- d) Goal clarity, change, and priorities

An area of some priority was that related to participant accountability.

5.8.1 Participant Power and Accountability

- If participants gain power, for what are they to be held accountable?
- Are groups or individuals prepared to assume responsibility?
- Should recipients of service evaluate and shape service in terms of quality and quantity? What are implications for productivity?
- How do different power distributions affect the kind of information and accountability systems that are implemented? Does strong teacher dominance necessarily dictate a system focussed on input information? Does community dominance imply a system that focusses more heavily on output information? If there are many bases of power, is the result going to be more information, but information that is less reliable?

As noted previously we may define research questions that span several cells. Another such example would be the effect of participants/power on both structure and on goals/outcomes (cells 7 and 8). An example would be a study of the impact of change agents on educational systems.

- How can infusion of outside change agents affect structure and goal definition? In what kinds of settings do various kinds of change agents have positive or negative effects? Also, are different kinds of change agents differentially effective in different kinds of communities, e.g., university types having a better chance of success in middle class communities, than in the inner city and street-wise types a greater chance of success in inner-city areas.

Cell 9

5.9 Nature of Educational Participants and Power Distribution

There is a need to develop a data base on such questions as:

- What is the range of existing variability in power and normative systems relating to the control of school systems? What is the degree of change each represents from the conventional model of control over educational decision making? On what kinds of dimensions are the changes salient?

Specific priority areas meriting research support were defined as being concerned with:

- a) Power distribution among system participants; and a potentially important policy oriented issue;
- b) Cooperation/competition between participants.

5.9.1 Power Distribution among Participants of Educational Systems

- What is the nature of constituency groups that press for specific goals?
- Are there ways to obtain consensus even though there is apparent conflict over goals?

- Do coalition groups form because of external needs or as reaction to internal action or inaction?
- What new balances of power and exchange are evolving as a result of the simultaneous demands being made by teacher organizations and citizen groups?
- How does variability in governance mechanisms affect the power distribution between professionals and laymen, between teachers' unions on the one hand and administrators and laymen on the other?

5.9.2 - Cooperation/Competition between Participants

- What forms of relationships do (and should) exist between school districts and other social service institutions, e.g., police, welfare agencies, medical profession?
- What are the implication of inter-agency coordination and competition?

5.10 General Comments on Research Strategy

Even though methods and measurement problems are covered below, a few comments about them seem to be in order at this point. Our primary concern is that the full range of changes in education be considered in any research. Exploratory observational studies must be done first; they should be followed by historical or archival studies of ongoing organizations.

1. Exploratory observational studies. Again, we need to capture the full range of variation of educational changes. These studies need not be limited to primary and secondary education, and they need not be limited to educational practices in the United States.
2. Historical/archival studies. The main purposes of such studies would be to establish whether, in the past, changes in education have led to the kinds of changes in information, accountability, and administration we have hypothesized. If school systems have in the past been unaffected by fundamental changes in educational practice, then the wisdom of further large-scale non-experimental studies should be question.

3. Longitudinal studies of ongoing educational organizations where changes are occurring. Again, this is covered in the methods section. Suffice it to say that the cyclical character of education and the lengthy lags in causal processes almost demand the longitudinal design.

As a preliminary to explanatory and predictive studies of questions about the interrelations among these sets of variables, some basic descriptive studies are needed to provide us with basic information about the range of existing variability in structure, power, rationalization, state of art, information and accountability systems. Studies of this type would provide basic substantive information and a catalogue of potential sites for the research of various kinds to be conducted in the later phases of the program (i.e., where to conduct field/ethnographic studies on a given question, what stratification dimensions are reasonable for a large sample study, etc.) Conceptual studies might also be commissioned to delineate the broader range of hypothetically possible variability in each change area. Given the dimensions on which changes are occurring in x that do not yet exist what might appear over the next 10 to 20 years? Research on such variants that do not as yet exist would move the program toward policy experiments.

5.11 Utilization

Unfortunately, the major impact of basic research is often felt through the training of new generations of future professionals and administrators. This imposes long lags between the generation of knowledge and its effective integration with practice.

In terms of shorter cycles, the existence of in-house capabilities in the field allows an indirect process of interpretation and recombination

through consultants, program managers in regulatory agencies, professional media directed at the educational community, etc. Research findings can redirect this effort from blind alleys and into potentially fruitful channels.

A key problem for all organizations in today's relatively turbulent environments is the discovery and institutionalization of processes that make work systems more immediately responsive to increments in knowledge rather than relying excessively on the vagaries of personnel succession to produce changes in know-how. Widespread encounters between researchers and thoughtful administrators and professionals make some beginning toward providing target organizations with insight into current theoretical perspectives and with operational means of generating information on significant variables. Although the link between a fundamental theoretical understanding and practical application is not obvious, its absence reduces practice to dependence on environmental control for effectiveness and survival. Developing the link is a clear way to progressive change and greater practical achievement as illustrated in science-based technologies.

6. MEASUREMENTS AND RESEARCH DESIGN

In this next section a perspective on research methods is offered along with an assessment of current trends in organization theory research. Several research problems are offered as examples of the current trends.

6.1 Types of Methods

There are many types of research methods that can be applied to the study of administrative functions in educational institutions. A list of general classes in order of the amount of experimental control the experimenter has over the situation in question and in decreasing order of the amount of reality of the study is as follows: case study, comparative case studies, cross sectional surveys, field experiments, laboratory experiments, mathematical and simulation models.

In choosing a method, one finds that each one has advantages and disadvantages. Fortunately, as is implied in the ordering above, the disadvantage of one method is the advantage of another. A case study has all the richness and reality that makes organizational life interesting. However, one never knows to which of many factors to attribute the results. The greater control and sample size of a cross sectional study allows one to make correlations between factors but causality cannot be determined. More controlled experiments in laboratories allow more precise inferences to be made. However, it must be determined how realistic are the results. Subsequent testing in the "real" world through case studies can allow rejection and modification. Thus a form of programmatic research is ideal. The method chosen is a function of the amount of prior knowledge and the disadvantages of the most recent research efforts. With this as an introduction let us look at current trends in

organizational research and a few research projects that illustrate them.

6.2 Current Trends in Organizational Behavior Research

In the last decade or so the nature of organizational research has been transformed by a number of innovations in research design and data analysis. It is our argument that just as the organizational behavior field has benefited from such changes, so can specific research on educational organizations. It seems that proposals submitted to NIE ought to reflect at least an awareness of the trends listed below, and hopefully should take account of them in the conduct of the proposed research.

6.2.1 Panel or Longitudinal Studies are becoming more frequent, although they have not, by any means, displaced cross sectional studies. The advantages of a longitudinal design are several. First, it is difficult in cross sectional studies to sort out problems of causal priority, since all data come from one point in time. While ingenious use of slow and rapidly changing variables allows some

inferences about causal priority to be made, panel designs allow measurement at two points in time for all variables of interest. Second, some of the techniques developed recently for separating out stability and reliability in variables depend on access to data from at least three points in time. Third, panel studies make use of naturally occurring variation and thus do not require action research type intervention into an on-going system in order to produce variation in variables of interest. (Of course, the naturally occurring variation might take place in the variables of interest and then one has, in effect, a very expensive cross sectional study.)

Educational organizations, because of their rather stable periodicity, appear to be quite suited for study through panel designs. School years are blocked off into the same stages or sequences from one year to the next, making the identification of relevant data gathering points much easier than in organizations without such periodicity. Some good examples of studies would be to follow teachers who have just assumed or are about to assume an administrative role. How does their behavior and attitudes change over time? Do they begin to behave like managers or do they continue to behave like teachers? One could follow a teacher or a manager from the outside to see how they adapt to the role. Other year-to-year changes in parental preference, educational outcomes, etc. could be examined.

6.2.2 Field, Ethnographic or Intensive Case Study Research is achieving a position of respectability, such that it is an acceptable alternative to laboratory or survey research. William Foote Whyte used anthropological or ethnographic methods in the study of formal organizations in the 1940's and 50's, along with other researchers, but the survey research paradigm temporarily drove such research into shadows during the late 1950's and 1960's. Investigators have recently begun to recognize again the benefits of intensive day-to-day observation of the actual workings of organizations and the method itself is now the subject of a number of texts and readers.

The advantages of field or ethnographic research stem from the insights generated from systematically observing organizational participants carrying out their normal working routines. The extensive use of survey research to study organizations in the past decade sometimes had the effect of insulating investigators from the actual working processes of organizations being studied. For example, a recent review of what is known about the actual nature of managerial work, i.e.e. what a manager does during a normal working day, found that very little is known. The information we do have about managerial or administrative behavior on the job comes from those observers who have used field research methods.

Administrative Intensity Example

A more complete example is the question of relationships between size of administrative component and size of organization and impact of administrative components and educational outcomes. This is a research area that NIE should incorporate in its research portfolio. First, any studies on cost effectiveness of administration must be preceded by knowledge of the effects of different types and amounts of administrative activity. Second, the question is important to both educational practitioners and academics interested in organization. Presumably both sets of interests stem in part from attributes of the administrative intensity data. That is, measures, such as span of control, percent-

tage of administrators, student-teacher ratios, etc. are objective, reliable, accessible, comparable, etc. For this reason practitioners base decisions about budgets, hiring of staff, and additions to faculty on ratios of administrative intensity and academics have engaged in a good deal of theoretical speculation and empirical research of the cross sectional type on span of control, administrative intensity, and configuration. Thus, it is time to look behind the aggregate numbers and correlations from cross sectional studies to determine what they represent in terms of organizational processes.

One reason for the lack of consistent results may be that there are several forms of organization for performing the teaching function and in which the type and amount of administrative activity is different. For example, teaching can be considered a craft or professional activity where the key relations are between students and teachers. In order to handle the diversity of individuals, the decision making is decentralized to small autonomous groups. The control system is one of hiring, promoting and grouping trained individuals. Another model would be a mass production or bureaucratic model where activities are centrally planned, communicated to teachers, and compliance and results measured. One could hire more ordinary individuals and guide them with programs designed by experts. In other contexts, it has been shown that the craft model has fewer administrators and clerical personnel. Both models are viable from cost benefit standpoint. The reduction of administrative and clerical tasks is offset by hiring more expensive professional people who can exercise discretion. But in either case the relation between administrative intensity, size and performance will be different for the two models.

In order to be more precise, research should be directed at discovering the processes which lie behind the numbers in these two different organizations. It is worthwhile to conduct those studies in educational institutions even though a body of research exists on business organizations. The reason is that

there is less agreement on goals in educational institutions and therefore conflict resolution (a primary administrative activity) is more difficult. The research design appropriate for this inquiry appears to be an indepth initial study of a couple of organizations of each type, a comparative case study. The output would be not only a description of the organization and processes but hypotheses to guide a large scale study and measuring instruments to make the large scale study operational.

A number of instruments should result from the study. First, a means of characterizing the environment, such as tax base per student, culture of district, type of board, etc. and develop scales, look for clustering of variables and generate a typology of environments. Second, profiles of major participants should be made. There are students, administrators, teachers, specialists with student contact, specialists with no direct student contact and support activities, such as transportation, lunch, maintenance, etc. For these, especially the first three, the profile should contain backgrounds, training, and personality types. For students, measures of cognitive and personality development are needed for performance relations. The organization structure can be characterized by modified scales taken from the Pugh et al. studies. Collectively these measures will give an aggregate characterization of the participants and the structure within which they work.

The next step is the characterization of the process in the organization with particular reference to the administrative effects. One design would be to follow participants through the system over a period of a school year. For example, follow one or two students in

each grade in each school. By means of interview, diary and observation determine contract patterns, attitudes, change in scores over years, etc. Then do the same for teachers and administrators. Follow a group of each and determine their behavior with time budgets and contact patterns. Then follow one or two major decisions, such as curriculum redesign through the organization recording who participates, who is most influential, what information is used and implementation. One of the most interesting decision to trace through the system is the choice of the form of organization itself. By following different groups of people and types of decisions through the structure one should develop a good characterization of what administrative activity is performed, how it impacts participants and how it is different in two types.

Actual behavior of administrators

The issue of what educational administrators and other staff members actually do is relevant to other researchable issues confronting NIE. For example, how much time do principals spend interacting with teachers, school board members, and parents? What are the consequences of spending more or less time? How much time is spent in keeping up with new educational technologies? What sources does the principal rely on for information? It must be stressed here that while questionnaire technique shows that an investigator may be seriously misled if he accepts respondent responses uncritically.

Mintzberg's research, for example, shows that managers spend very little time on long range planning or organizational issues. Instead, they spend most of their time responding to immediate stimuli and putting out "brush fires." Surely any attempts to re-design the role of educational administrators should take account of the current characteristics

of the role! For example, it would hardly make sense to theorize about the impact of changing the way long range planning is carried out without determining whether any long range planning is currently taking place. A variation on this theme is to use case studies as diagnostic tools.

Organization Diagnosis

The research approach suggested here, organizational diagnosis, is distinct from two other approaches to the study of organizational processes, namely, formal organizational theory and organizational development (OD). Much of the description of proposed measurement of organizational design falls clearly within the mainstream of traditional organizational theory. Very little has been said about the potential contribution of OD to the measurement process (despite the increasing body of research which has emerged around the more general problem of applying organizational development techniques to schools). OD approaches are based on organizational theory (especially the concept of needs for differentiation and integration among components of the organization), on small group dynamics, and on a motivational theory which emphasizes individual needs for achievement, affiliation, and power. The early research and applications of OD in education have indicated some special difficulties in dealing with schools as organizations: (1) they are not relatively open, (2) they often do not perceive the need for improved organizational functioning, (3) they are often not able or willing to make strong resource commitments to better functioning. Further, inexperienced trainers have sometimes used the highly specific and obvious interventions of OD to exacerbate conflict. Finally, OD's reliance on personality theory often appears too reductionist. It seems often only to be able to make limited contributions to understanding how behavior arises from the ways in which people feel about themselves, others, and the organization. Each person has his own motivational structure

closely related to his psychological development and OD has often not dealt with its variety and subtlety.

Organizational diagnosis, by contrast, attempts to combine depth psychology with organizational theory and emphasizes diagnosis that accounts in detail for the ways in which organizational process and structure interact with individual personality to produce motivation. Its interventions are not prescribed and obvious; instead they vary significantly in different organizations since they are based on a searching analysis of each setting. Organizational diagnosis facilitates understanding motivation at the level of depth psychology rather than reducing motivation to a small number of major needs. Thus, it is recognized that all behavior in organizations is not simply rationale indeed the "irrational" can play a major role in providing conflict and organizational destructiveness. The depth psychological framework, utilizing a clinical approach, focuses on explaining both individual and organizational behavior in intra-psychic terms and thus tries to explain and deal with rather than ignore an important element of both individual and organizational process.

a) Organizational Diagnosis and Education

Despite the prevalence of problems in implementation and in analysis, motivational problems are among the very important but little studied of the causes of system planning failures. Motivation may be central because school system personnel--especially teachers--have discretion so broad that it enables them to determine ultimate resource use as much as higher level policies do. Yet most planning systems in school systems have been implemented in ignorance of motivational issues. Few attempts are made to discover what goals actually--rather than formally--pursue so that the performance measures, effectiveness analysis, and feedbacks of planning

systems often have little relevance to classroom activities. Moreover, few efforts to implement planning systems have tried to assess the psychological impacts of the system and the new politics to which it may lead. Thus organizational diagnosis aims to develop a procedure which will yield information about the character of planning system and its effects on personnel. The development of a clearly delineated diagnostic procedure and the information which it will generate hopefully would provide a basis for understanding the relationship between motivation of personnel and the success of administrative attempt at planning and evaluation.

The issue of motivation leads also to a number of related organizational and individuality personality characteristics, many of which may account for and determine the character and success of administrative managerial innovation. NIE funded research which would attempt to measure motivation, anxiety, frustration, resistance to change, attitudes, belief systems, concepts of self and development, on both a key individual level as well as synthetically (for the organization as a whole) may be extremely productive in terms of providing a sharpened set of diagnostic tools as well as the beginnings of a more generalized explanation of administrative and management failures. Many of the variables just described impinge on both individual and organizational freedom and development. Such inquiries need not be made without reference to a theoretical base which can be found in the motivational and behavioral implications of both structural and neo-Freudian interpretations of depth psychology.

In summary, it is hoped that development of a method of organizational diagnosis would provide the framework for understanding more clearly central issues in the intersection of "people problems" and the implementation of planning technology in education.

b) Design, Relevant Research Questions and Data Needs

Research designs would be clinical in nature, would use both structured and unstructured interviews, anthropological field methods of participant observation, and formal questionnaires. Relevant research questions would include what is the relationship between the success of an administrative initiative in formal planning and evaluation and the motivation of line and staff personnel in a school system. Further, what are the procedures and phases typifying planning system implementation. Also, what mode of effectiveness analysis is used in planning system implementation. What uses typically are made of the results of planning systems? How does planning system implementation affect organizational anxiety, attitudes and individual agendas? Finally, what generalized statements can be made from the comparative analysis of differing managerial and planning interventions.

Relevant data would include genetic data such as history, description and analysis of the organization as a whole, such as formal organization, personnel systems and characteristics, communication channels, etc. and interpretive data such as organizational perceptions, knowledge, language, emotional atmosphere, attitudes and relationships, anxiety, levels of frustrations, etc.

On the basis of such data and analysis, models might be constructed to appraise the school system's degree of integration with its environment--its coping ability in terms of reality orientation, values and ideals, and task mastery. Thus, drawing on the established relationships between diagnostic and implementation variables, models would aid users to choose appropriate types of planning systems, modes of effectiveness analysis, and strategies for implementation.

The thrust of this recommendation is to encourage more field observation studies that provide, at the very least, descriptive information on what's actually happening in educational organizations. This point extends to teachers as well as administrators.

6.2.3 Multi-Dimension, Trait, Rates, Uses Methods

The use of multiple indicators rather than single indicators of key concepts ought to be encouraged. Concepts such as "planning system effectiveness" or "teacher motivation" are both too abstract and too important to be measured by single indicators. Ideally, the use of multiple indicators would mean that investigators include not only their own operationalizations of concepts but also those suggested by the work of others.

In education there are many such ambiguous, important concepts. Existing measures of "effectiveness" may not reflect this multi-dimensionality. What is needed is the development of multi-trait, multi-rater for multi-user measures of educational and organizational concepts.

There is a danger in policy oriented research that a concern for immediate results might override normal investigator caution in assessing the reliability and validity of research results. The use of multiple indicators is a check on the propagation of idiosyncratic or unreliable results. Recent work in organization behavior has pointed up the limitations of studies that heretofore were cited as general models of organizational structure.

6.2.4 Formal Models

Theorists and investigators are now working with more explicit causal models of organizational structure than before, and as a result possibilities for replication and extension are greatly enhanced. Taxonomies of verbal, descriptive models of the past were not sufficiently precise to permit empirical tests of their implications, and each investigator was free

to re-interpret what it was that the theorist really meant. If NIE funded research is to serve as a basis for policy decisions, such imprecision should not be permitted.

This point goes beyond merely requiring that investigators explicitly specify individual hypotheses. Instead, investigators ought to provide explicit causal models of organizational structure and process that guide their work, and individual hypothesis should be interrelated to show the structure of the system of relationships being hypothesized. An explicit model of the structure of the educational organization being studied would make fuzzy thinking visible and would allow other investigators to compare their work to the study in question.

Explicit formal models of the structure and process of educational organizations could be used as a basis for forecasting and planning by administrators and policy planners. In particular, the use of cost effectiveness techniques depends upon the availability of formal modes that specify inputs and outputs in a clear enough way to permit the unambiguous assignment of specific costs to specific outputs. Elsewhere in this report we note that methods to improve the planning capability of educational administrators are in great demand, but that formidable barriers to effective planning exist. Building explicit models of organizational structure permits a planner to identify which variables are amenable to control and thus may be "planned for", and which variable must be taken as given.

The experience of econometric studies has shown the power and effectiveness of basing empirical investigation on carefully, and often intensively elaborated, formal models. The measurement process is often, in the end, applied to relationships which have been derived, sometimes by a long chain of reasoning, as implications of the theoretical model initially specified. Research directed to the specification and analysis

of formal theoretical models of school systems, and ultimately to the empirical fitting of relationships derived in such models, should be supported as a part of the total research effort.

A formal model of educational organization would identify the significant constraints, the significant decisions and their consequences. Such a model could be used to obtain qualitative information regarding the implications of policy changes. It could also be used to organize and direct empirical research by focusing on the key parameters of the system. It could be used as a framework in which the results of diverse investigations could be related to one another and to the larger questions which have been posed for this area of research. Such a model would also guide the selection of research methods, particularly statistical methods, by making explicit the assumptions and interrelations of the system under study.

What might such a formal model of a school system look alike? It should contain a formal representation of those elements of the situation which influence the school's functioning and performance, and over which the school system has little or no control. These would include: the tax base, more broadly the resource base of the system; the characteristics of the population generating the student population; the characteristics of the supply of teachers, and more broadly, educational personnel, and the market for such personnel; the existing state of knowledge about educational processes and methods -- the "state of the art" of teaching; the existing stock of capital assets inherited from the past, e.g., buildings, labs, shops, etc.

The model should also contain a specification of the activities carried on by the system. The existing student body, each student being characterized by a multi-dimensional vector describing his relevant attributes (e.g., abilities of various kinds, state of knowledge or competencies in various areas,

personality characteristics, etc.) is partitioned into groups of various sorts (curricular programs, "trades") ultimately into specific classes. Similarly, the available population of teachers is assigned to classes. In some way, the activities to be conducted in those classes is determined, including the methods or techniques of instruction.

The model should further make explicit the policies or decision rules followed by the system. The decisions which determine the micro-level activities of the system--the formation of individual classes with teacher, a specific group of students and a determined program of activities--are usually the result of the operation of policies or decision functions. For example, a student attends the school nearest his home, is assigned to or elects a program as a result of an academic advising process, is assigned to classes on the basis of information generated by that process, and so forth.

Finally, the model must also include the changes in students, teachers, etc. brought about by the educational process operating, say, for one term. This is a subtle and complex modeling task. Briefly, the state of the student (teacher, etc.) is not directly observed by anyone else. Information about that state can be obtained by others only as a result of a process of observation measurement. The student can be examined in various ways, interview or otherwise questioned and the resulting measurements constitute information about this "time" state, information which is necessarily incomplete.

This information serves as the basis on which others can evaluate the educational process. Hence, the decisions as to what is observed, what measurements are made and to whom are they available, become important determinants of the evaluations made by everyone in the system and in the surrounding community.

6.2.5 Large Sample Studies

Large sample studies have become more prevalent in the organizational behavior, but they have not pushed out small scale or case studies. Instead, there is a growing recognition of the uses and limitations of the various types of studies: case, exploratory, large scale, cross sections, etc. Large scale samples appear to be very important to the objectives of NIE because of the necessity of identifying and separating out which features of successful educational innovations are due to the unique characteristics of a particular school system and which features are generalizable to other school systems. For example, there is an understandable but potentially dangerous tendency to generalize from the experience of a few large and visible school systems to the rest of the 18,000 school districts. Attention to proper sampling and selection should dampen this tendency.

A useful type of research would be to build on the administrative intensity case studies described earlier. Based on results from the case studies a second phase should be undertaken to increase sample size and decrease detail in each school. Some additional measurement and methodological innovation is needed at this point. First, there may not exist schools in all categories. For example, craft schools with non-authoritarian teachers may not exist in lower class, white neighborhoods or one may not be able to find open classroom schools with authoritarian teachers. This contingency theory would also restrict the ranges of variation in variables which may be needed for validation. What is required is some methodological invention or the creation of scales which are independently defined. A second need for invention is a measure of "fit". That is, one would expect an open classroom and non-authoritarian teachers to be effective, but a mass production type and non-authoritarian teachers to be ineffective. This means it is not the size of the administrative component but the fit of the component with

the teachers, structure, students, processes and environment. A concept and measure of it which encompasses all these factors needs to be developed and tested. In order to perform an adequate test of the contingency theory a large scale sample is needed.

6.2.6 Quasi Experiments

Wide-spread use of survey research in the past few decades has obscured the existence and availability of data from other sources, especially data in the archives of organizations under study. Archival data not only has the advantage of being cheaper to collect in many cases, but also is non-reactive. The collection of archival data does not cause changes in the variables under study, nor does it involve the hazards of information distortion that arise from interviews with "live" respondents. For example, during the past several decades many school systems in the United States have engaged in innovations, some of which survived and some of which did not. Clearly many records were kept concerning these innovations and prudent inquiry could uncover such systems for further study. This is merely an elaboration of Campbell's point about the existence of many "natural experiments" that occur because of administrative action and can be analyzed in the same manner as laboratory experiments.

6.2.7 Theory Based Research

One rather precarious trend that should be reflected in the NIE basic studies section is that toward doing theory-based research rather than short-run problem solving research. Although the distinction between applied and basic research is often overdrawn, it is clear that many research findings cannot be fit into any larger body of organizational theory precisely because the research was not initially grounded in theory. Requiring that investigators provide explicit causal models of their research hypotheses

is one way of coercing investigators into giving some thought to where their work fits into the mainstream of organizational behavior. Most schools have data that they are unaware of and which could be useful. In addition there is the huge data base of National Center for Education Statistics.

This recommendation requires that some mechanism be developed for linking the people who do basic research with the people who do program evaluation research. One procedure for making the basic organizational research community aware of these field opportunities would be a newsletter listing prospective sites and projects. A second procedure would be for project officers to bring together both a basic and applied staff for studying pilot projects and feasibility studies.

6.2.8 Experimentation

Although in recent years planned experimentation with organizational systems has become more prevalent, its scope has been somewhat narrow. To date, several organizational process variables (e.g., interaction style of managers, intra group communication and feedback) have been purposely altered by O.D. or sensitivity training specialists. However, this same type of experimental methodology has not yet been fully applied to changes in organizational design. In terms of educational organizations, changes in variables, such as administrative intensity, teacher autonomy, or student participation should be considered as experimental treatments and the effects subjected to the rigors of experimental inference. The approach suggested here is twofold: 1) new or promising developments in organizational design should be introduced by trained change agents from outside the organization (e.g., as NIE sponsored researchers) and 2) the managers of an organizational system (e.g., principals and school superintendents) should introduce changes on their own and carefully monitor the effects.

The measurement of organizational changes is the key element of administrative experimentation. One obviously recommended design would include true organizational experimentation in which pretest and posttest measures are taken from both experimental and control groups. The most important feature of true experimentation is the random assignment of planned changes to a number of organizational units (e.g., classrooms, schools, districts, etc.). However, since randomization is not always feasible, a quasi-experimental design must often take precedence. The most practical quasi-experimental design is the interrupted time-series design in which either archival and/or perceptual measures are gathered over time and data are analyzed for treatment effects. Improvements in the quality of causal inference can also be accomplished by comparing the time series data of an experimental group to the data of control groups. In terms of educational organizations, this means that design changes such as increases in autonomy in one school system should be compared to school systems in which no changes have been made. In addition, several experimental changes should often be compared across school systems by examining the time-series data for all treatment groups. For example, autonomy may be increased in one school system, decreased in others, while left unchanged in a third group of schools. The pattern of data from the three groups (treatment and control) could then be examined for both theoretical and practical implications.

6.3 Some Non-Trends Which May Be Desirable For Research On Educational Organizations

In addition to the aspects of design discussed above, there may be other approaches to organizational research which are desirable, if not yet trends in the published literature. One of these desirable approaches is the investigation of particular theories via multiple research methodologies. Just as the multiple measurement of a given variable increases its reliability and validity, a multiple methods approach to theory testing can improve both causal inference and generalizability. Therefore, researchers should be encouraged to attack a problem from several different perspectives (e.g., participant observation, cross sectional survey, laboratory experimentation). This could be enacted either through an interdisciplinary team approach to research or by a concerted attempt (e.g., via funding) to stimulate cross-validating studies.

A second approach to research on educational organizations is related to theoretical levels of analyses. Typically, sociologically oriented studies of organizations are conducted relating macro or structural level variables, while psychologically oriented studies are conducted using individual or micro process variable. Very seldom is there a creative crossing of these two theoretical approaches or the testing of a theory involving both micro and macro variables. Research on educational organizations should encourage cross-level analyses. Some examples might include the effects of large-scale structural changes on teacher ambition or effects of changes in teacher incentives on administrative overload.

A third desirable approach to research on educational organizations is the "piggy-backing" of basic and applied research within single large-scale educational innovations. Although many projects are implemented on an experimental basis and evaluated in terms of feasibility/effectiveness, changes

in school systems can also contribute to basic understanding of educational organizations. For example, the evaluation of a voucher system, compensatory education program, etc. is no doubt valuable for isolating innovations that work from those that are failures. However, the specification of why one projects works and another doesn't or why a given program is successful in one setting and not another would seem to call for a more basic understanding of the processes involved. Thus, it may often be desirable to run "theoretically-based" studies in conjunction with program evaluation research. While program evaluators measure changes in outcome variables and work out problems of implementation, (NIE recruited) basic researchers could be measuring the effects of changes in one conceptual variable upon another. In practical terms, this means that, in addition to asking questions like, "Does a voucher system work?" we should be measuring the effects of a voucher system on evaluation apprehension, professional autonomy, role ambiguity, etc., and relating these conceptual variables to teaching performance. In the long-run, this kind of theoretical understanding should lead to improvements in the types of changes undertaken as well as to new strategies of implementation.

7. SUMMARY: THE RESEARCH PRIORITY STRATEGY

We close with some final brief thoughts on research strategy:

1. The research program to be supported by NIE should endeavor to cover as many of the nine cells of the previously presented matrix of research questions as possible.
2. There is a need for implementation oriented research.
3. An effort should be made to fund research that utilizes a variety of methodological approaches.

4. Some priority should be given to early support of research of an anthropological variety to determine the present state of the educational system. This suggests a combination of case studies and on-going longitudinal panel studies.
5. There are some important benefits to be obtained from laboratory experiments and mathematical models building types of research to aid in hypothesis generation, and in sharpening theory.
6. In integrating consideration of research issues and methodology the following should be borne in mind:
 - a) Research programs should be directed to (or supported at) locations where specific theoretical and methodological skills already exist.
 - b) An emphasis should be placed on funding cross disciplinary research.
 - c) Advantage should be taken of the comparative institutional perspective of the organization behavior research community. Studies comparing schools to other kinds of institutions should be encouraged.